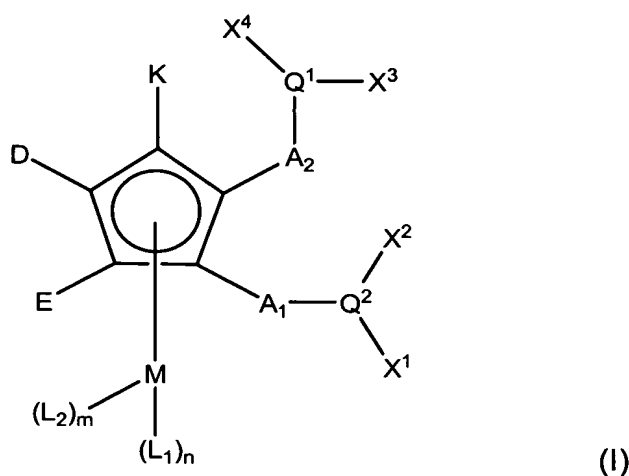


Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

1. (Original) A compound obtainable by combining:
 - (a) a Group VIIIB metal or a compound thereof; and,
 - (b) a compound of formula I or salt thereof:



wherein:

A₁ and A₂, and A₃, A₄ and A₅ (when present), each independently represent lower alkylene;

K is selected from the group consisting of hydrogen, lower alkyl, aryl, Het, halo, cyano, nitro, -OR¹⁹, -OC(O)R²⁰, -C(O)R²¹, -C(O)OR²², -N(R²³)R²⁴, -C(O)N(R²⁵)R²⁶, -C(S)(R²⁷)R²⁸, -SR²⁹, -C(O)SR³⁰, -CF₃ or -A₃-Q³(X⁵)X⁶;

D is selected from the group consisting of hydrogen, lower alkyl, aryl, Het, halo, cyano, nitro, -OR¹⁹, -OC(O)R²⁰, -C(O)R²¹, -C(O)OR²², -N(R²³)R²⁴, -C(O)N(R²⁵)R²⁶, -C(S)(R²⁷)R²⁸, -SR²⁹, -C(O)SR³⁰, -CF₃ or A₄-Q⁴(X⁷)X⁸;

E is selected from the group consisting of hydrogen, lower alkyl, aryl, Het, halo, cyano, nitro, -OR¹⁹, -OC(O)R²⁰, -C(O)R²¹, -C(O)OR²², -N(R²³)R²⁴, -C(O)N(R²⁵)R²⁶, -C(S)(R²⁷)R²⁸, -SR²⁹, -C(O)SR³⁰, -CF₃ or -A₅-Q⁵(X⁹)X¹⁰;

or both D and E together with the carbon atoms of the cyclopentadienyl ring to which they are attached form an optionally substituted phenyl ring:

X¹ represents CR¹(R²)(R³), congressyl or adamantyl, X² represents CR⁴(R⁵)(R⁶), congressyl or adamantyl, or X¹ and X² together with Q² to which they are attached form an optionally substituted 2-phospha-adamantyl group, or X¹ and X² together with Q² to which they are attached form a ring system of formula Ia;

X³ represents CR⁷(R⁸)(R⁹), congressyl or adamantyl, X⁴ represents CR¹⁰(R¹¹)(R¹²), congressyl or adamantyl, or X³ and X⁴ together with Q¹ to which they are attached form an optionally substituted 2-phospha-adamantyl group, or X³ and X⁴ together with Q¹ to which they are attached form a ring system of formula Ib ;

X⁵ represents CR¹³(R¹⁴)(R¹⁵), congressyl or adamantyl, X⁶ represents CR¹⁶(R¹⁷)(R¹⁸), congressyl or adamantyl, or X⁵ and X⁶ together with Q³ to which they are attached form an optionally substituted 2-phospha-adamantyl group, or X⁵ and X⁶ together with Q³ to which they are attached form a ring system of formula Ic ;

X⁷ represents CR³¹(R³²)(R³³), congressyl or adamantyl, X⁸ represents CR³⁴(R³⁵)(R³⁶), congressyl or adamantyl, or X⁷ and X⁸ together with Q⁴ to which they are attached form an optionally substituted 2-phospha-adamantyl group, or X⁷ and X⁸ together with Q⁴ to which they are attached form a ring system of formula 1d ;

X⁹ represents CR³⁷(R³⁸)(R³⁹), congressyl or adamantyl, X¹⁰ represents CR⁴⁰(R⁴¹)(R⁴²), congressyl or adamantyl, or X⁹ and X¹⁰ together with Q⁵ to which they are attached form an optionally substituted 2-phospha-adamantyl group, or X⁹ and X¹⁰ together with Q⁵ to which they are attached form a ring system of formula 1e ;

Q^1 and Q^2 , and Q^3 , Q^4 and Q^5 (when present), each independently represent phosphorus, arsenic or antimony;

M represents a Group VIB or VIIB metal or metal cation thereof;

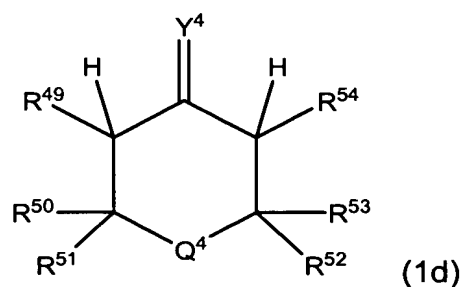
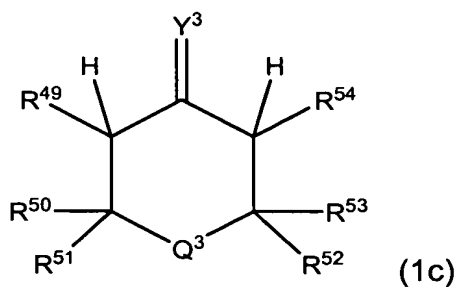
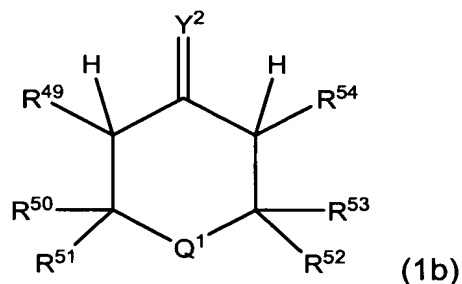
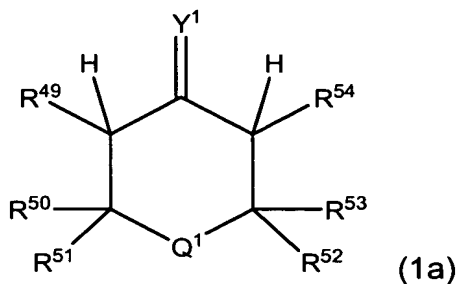
L_1 represents an optionally substituted cyclopentadienyl, indenyl or aryl group;

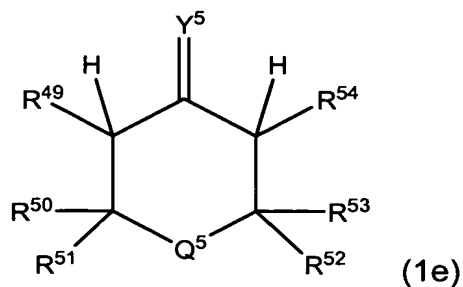
L_2 represents one or more ligands each of which are independently selected from hydrogen, lower alkyl, alkylaryl, halo, CO, P (R^{43})(R^{44}) R^{45} or N(R^{46})(R^{47}) R^{48} ;

R^1 to R^{18} and R^{31} to R^{42} , when present, each independently represent hydrogen, lower alkyl, aryl, halo or Het;

R^{19} to R^{30} and R^{43} to R^{48} , when present, each independently represent hydrogen, lower alkyl, aryl or Het;

the ring systems of formula 1a, 1b, 1c, 1d and 1e are represented by the formulae





R^{49} , R^{54} and R^{55} , each independently represent hydrogen, lower alkyl or aryl; R^{50} to R^{53} each independently represent hydrogen, lower alkyl, aryl or Het; and Y^1 , Y^2 , Y^3 , Y^4 and Y^5 , each independently represent oxygen, sulfur or $N-R^{55}$;

$n = 0$ or 1 ;

and $m = 0$ to 5 ;

provided that when $n = 1$ then m equals 0 , and when n equals 0 then m does not equal 0 .

2. (Currently amended) A compound as claimed in claim 1, wherein if both K represents $-A_3-Q^3(X^5)X^6$ and E represents $-A_5-Q^5(X^9)X^{10}$, then D represents $-A_4-Q^4(X^7)X^8$.

3. (Currently amended) A compound as claimed in claim 1 or 2, wherein R^1 to R^{18} and R^{31} to R^{42} each independently represent hydrogen, optionally substituted C_1 - C_6 alkyl or optionally substituted phenyl.

4. (Currently amended) A compound as claimed in ~~any one of claims 1 to 3~~ claim 1, wherein R^1 to R^{18} and R^{31} to R^{42} each independently represent hydrogen or non-substituted C_1 - C_6 alkyl.

5. (Currently amended) A compound as claimed in ~~any one of claims 1 to 3~~ claim 1, wherein one or more of the groups R^1 to R^3 , R^4 to R^6 , R^7 to R^9 , R^{10} to R^{12} ,

R¹³ to R¹⁵, R¹⁶ to R¹⁸, R³¹ to R³³, R³⁴ to R³⁶, R³⁷ to R³⁹, R⁴⁰ to R⁴² together with the carbon atom to which they are attached each independently form a cyclic alkyl structure.

6. (Currently amended) A compound as claimed in ~~any one of claims 1 to 3~~ claim 1, wherein one or more of the groups R¹ and R², R⁴ and R⁵, R⁷ and R⁸, R¹⁰ and R¹¹, R¹³ and R¹⁴, R¹⁶ and R¹⁷, R³¹ and R³², R³⁴ and R³⁵, R³⁷ and R³⁸, R⁴⁰ and R⁴¹ together with the carbon atom to which they are attached each independently form a cyclic alkyl structure.

7. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein each of R¹ to R¹⁸ and R³¹ to R⁴² does not represent hydrogen.

8. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein adamantyl represents unsubstituted adamantyl or adamantyl substituted with one or more unsubstituted C₁-C₈ alkyl substituents, or a combination thereof.

9. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein 2-phospha-adamantyl represents unsubstituted 2-phospha-adamantyl or 2-phospha-adamantyl substituted with one or more unsubstituted C₁-C₈ alkyl substituents, or a combination thereof.

10. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein 2-phospha-adamantyl includes one or more oxygen atoms in the 2-phospha-adamantyl skeleton.

11. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein congressyl represents unsubstituted congressyl.

12. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein R^{50} to R^{53} each independently represent optionally substituted C_1 - C_6 alkyl, trifluoromethyl or phenyl optionally substituted with non-substituted C_1 - C_6 alkyl or OR^{19} where R^{19} represents non-substituted C_1 - C_6 alkyl.

13. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein R^{49} and R^{54} each independently represent hydrogen or non-substituted C_1 - C_6 alkyl.

14. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein each of Y^1 to Y^5 represents oxygen.

15. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein X^1 is identical to X^3 , and X^5 , X^7 and X^9 when present.

16. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein X^2 is identical to X^4 , and X^6 , X^8 and X^{10} when present.

17. (Currently amended) A compound as claimed in ~~any one of claims 1 to 14~~ claim 1, wherein X^1 represents $CR^1(R^2)(R^3)$, X^2 represents $CR^4(R^5)(R^6)$, X^3 represents $CR^7(R^8)(R^9)$ and X^4 represents $CR^{10}(R^{11})(R^{12})$.

18. (Currently amended) A compound as claimed in ~~any one of claims 1 to 14~~ claim 1, wherein X^1 represents $CR^1(R^2)(R^3)$, X^2 represents adamantyl, X^3 represents $CR^7(R^8)(R^9)$ and X^4 represents adamantyl.

19. (Currently amended) A compound as claimed in ~~any one of claims 1 to 14~~ claim 1, wherein X^1 represents $CR^1(R^2)(R^3)$, X^2 represents congressyl, X^3 represents $CR^7(R^8)(R^9)$ and X^4 represents congressyl.

20. (Currently amended) A compound as claimed in ~~any one of claims 1 to 14~~ claim 1, wherein X^1 to X^4 each independently represent adamantyl.

21. (Currently amended) A compound as claimed in ~~any one of claims 1 to 14~~ claim 1, wherein X^1 to X^4 each independently represent congressyl.

22. (Currently amended) A compound as claimed in ~~any one of claims 1 to 14~~ claim 1, wherein X^1 and X^2 together with Q^2 to which they are attached form a ring system of formula Ia, and X^3 and X^4 together with Q^1 to which they are attached form a ring system of formula Ib.

23. (Currently amended) A compound as claimed in ~~any one of claims 1 to 14~~ claim 1, wherein X^1 and X^2 together with Q^2 to which they are attached form a 2-phospha-adamantyl group, and X^3 and X^4 together with Q^1 to which they are attached form a 2-phospha-adamantyl group.

24. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein K represents hydrogen.

25. (Currently amended) A compound as claimed in ~~any one of claims 1 to 23~~ claim 1, wherein K represents $-A_3-Q^3(X^5)X^6$.

26. (Currently amended) A compound as claimed in claim 25, wherein $-A_3-Q^3(X^5)X^6$ is identical to $-A_2-Q^1(X^3)X^4$.

27. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein D and E together with the carbon atoms of the cyclopentadienyl ring to which they are attached form an unsubstituted phenyl ring.

28. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein D and E both represent hydrogen.

29. (Currently amended) A compound as claimed in ~~any one of claims 1 to 26~~ claim 1, wherein D represents $-A_4-Q^4(X^7)X^8$.

30. (Original) A compound as claimed in claim 29, wherein $-A_4-Q^4(X^7)X^8$ is identical to $-A_2-Q^1(X^3)X^4$.

31. (Currently amended) A compound as claimed in ~~any one claims 29 or 30~~ claim 29, wherein E represents hydrogen.

32. (Currently amended) A compound as claimed in ~~any one claims 1 to 26, 29 or 30~~ claim 1, wherein E represents $-A_5-Q^5(X^9)X^{10}$.

33. (Currently amended) A compound as claimed in claim 32, wherein $-A_5-Q^5(X^9)X^{10}$ is identical to $-A_2-Q^1(X^3)X^4$.

34. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein A_1 and A_2 , and A_3 , A_4 and A_5 when present, each independently represent $-CH_2-$ or $-C_2H_4-$.

35. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein each A_1 and A_2 , and A_3 , A_4 and A_5 when present are identical and preferably represent $-CH_2-$.

36. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein each Q^1 and Q^2 , and Q^3 , Q^4 and Q^5 when present are identical and preferably represent phosphorous.

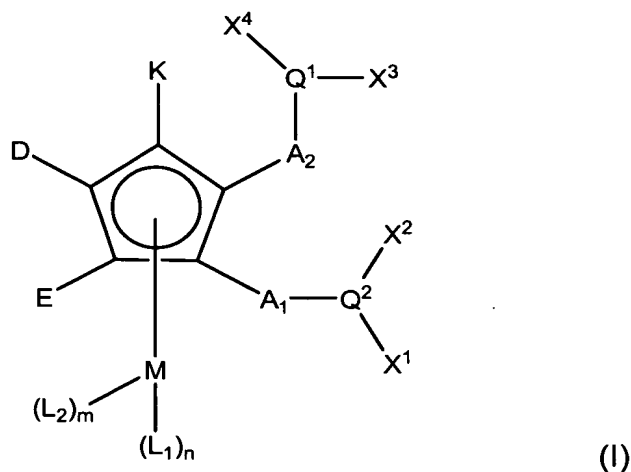
37. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein $n=1$, $m=0$ and L_1 is selected from cyclopentadienyl, phenyl, indenyl or naphthyl, preferably unsubstituted cyclopentadienyl.

38. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1, wherein M represents iron or a metal cation thereof.

39. (Currently amended) A compound as claimed in ~~any one of the preceding claims~~ claim 1 obtainable by combining: (a) palladium or a compound thereof; and (b) a compound of formula I as defined in ~~any one of the preceding claims~~ claim 1.

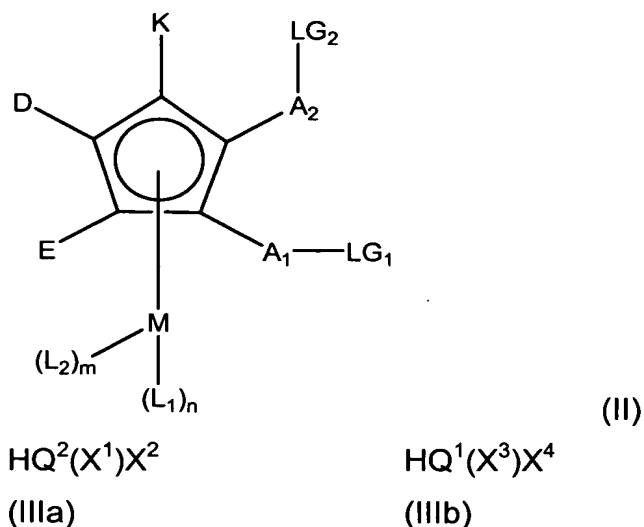
40. (Currently amended) A process for preparing a compound as defined in ~~any one of claims 1 to 39~~ claim 1 comprising combining (a) a Group VIII B metal or compound thereof; and, (b) a compound of formula I as defined in ~~any one of claims 1 to 38~~ claim 1.

41. (Currently amended) A compound of formula I



wherein A₁, A₂, K, D, E, M, L₂, L₁, Q¹, Q², X¹, X², X³, X⁴, n and m are as defined in ~~any one of claims 1 to 38~~ claim 1.

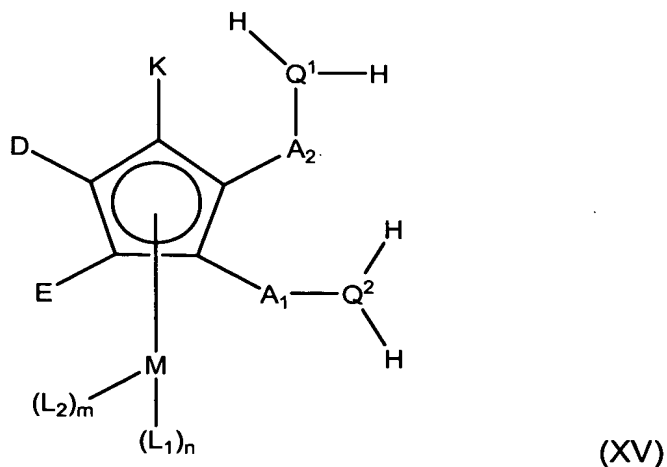
42. (Currently amended) A process for preparing a compound of formula I as defined in claim 41, comprising reacting a compound of formula II wherein A₁, A₂, K, D, E, M, L₁, L₂, n and m are as defined for a compound of formula I, and LG₁ and LG₂ represent suitable leaving groups, with a compound of formula IIIa and IIIb



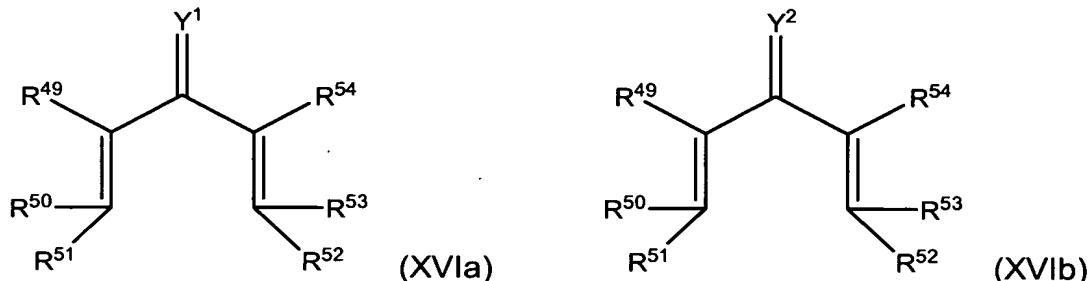
wherein X^1 , X^2 , Q^2 , X^3 , X^4 and Q^1 are as defined in ~~any one of claims 1 to 38~~ claim 1.

43. (Original) A compound of formula II as defined in claim 42.

44. (Currently amended) A process for preparing a compound of formula I wherein K, D, E, M, A_2 , A_1 , L_2 , L_1 , Q^1 , Q^2 , m and n are as defined in ~~any one of claims 1 to 38~~ claim 1 and X^1 and X^2 together with Q^2 to which they are attached form a ring system of formula Ia as defined in ~~any one of claims 1 to 38~~ claim 1 and X^3 and X^4 together with Q^1 to which they are attached form a ring system of formula Ib as defined in ~~any one of claims 1 to 38~~ claim 1, comprising reacting a compound of formula XV



wherein K, D, E, M, A₂, A₁, L₂, L₁, Q¹, Q², m and n are as defined in ~~anyone of claims 1 to 38~~ claim 1, with a compound of formula XVIa and XVIb



wherein Y¹, Y², R⁴⁹ to R⁵⁵ are as defined for a compound of formula I.

45. (Original) A compound of formula XV as defined in claim 44.

46. (Currently amended) A process for the carbonylation of an ethylenically unsaturated compound comprising contacting an ethylenically unsaturated compound with carbon monoxide and a co-reactant in the presence of a compound as defined in ~~any one of claims 1 to 39~~ claim 1.

47. (Original) A process as defined in claim 46 wherein the co- reactant includes a hydroxyl group containing compound.

48. (Currently amended) A process as claimed in claim 46 ~~or 47~~ wherein the ethylenically unsaturated compound comprises ethylene, 1, 3-butadiene, oct-1-ene or vinyl acetate, preferably ethylene.

49. (Currently amended) A process as claimed in any one of claims 46 ~~to 48~~, further including the step of including a source of anions.

50. (Currently amended) A composition comprising a compound as defined in ~~any one of claims 1 to 39~~ claim 1 attached to a support.

51. (Currently amended) Use of a compound as defined in ~~anyone of claims 1 to~~
~~39~~ claim 1 or a composition as defined in claim 50 as a catalyst.